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ABSTRACT

The five articles in this publication address the following topics: the need for effective communication in the dental office, communication skills among preschool children with sickle cell disease, the use of qualifiers in medical headlines, population communication in India, and the effectiveness of a home care program in facilitating therapy for communication disorders that occur as a result of cerebral vascular accident (CVA). (FL)

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Theme Issue on Health Communication

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The Encoder is published by the Metropolitan Washington Communication Association. There will be three issues published during the academic year, Fall, Winter, and Spring. Each issue will be developed around a theme or concept, although articles not related to the theme may be included from time to time. The current issue is devoted to Heaith Communication. The Winter issue which has a submission deadline of January 3, 1979, will be concerned with Health Communication, while the Spring issue will be concerned with Classroom Communication. It will have a deadline of March 1, 1979.

The Encoder will consider articles utilizing either the MLA Style Sheet (second edition) or the APA Publication Manual (second edition.) We ask that authors be consistent in the use of either system. We will consider any original article related to the theory, practice, or teaching of communication; we prefer articles of 2,000 words or less or with instructional resources, audiovisual materials, bilbiographies, or course materials. We also invite the submission of news and notes items for our news section, "Potomac Patter."

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THE ENCODER

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EFFECTIVE COMMUNICATION: A MUST FOR THE DENTAL OFFICE

Lyndrey A. Niles

Howard University

Communication theory and practice have long been considered a legitimate part of the domain of several other professions. Teachers in training are exposed to methods courses in pedagogical communication; members of clergy are required to take courses in homiletics - the art of preaching; while aspiring lawyers or politicians sharpen their rhetorical skills in forensic activities and moot court situations.

More recently, scholars have neen examining the role of communication in Health Care and Medicine, not only mass communication for educating the general public, but specifically, the use of interpersonal communication in the physician-patient setting.

Dr. Orlando Taylor, in an unpublished paper presented at the University of Tennessee, College of Medicine, highlighted four major components of rapport-building in the physician-patient relationship:

> There are many aspects of interpersonal communication which could negate positive physician/client communication, particularly when the aforementioned cultural differences are present. Chief among them are:
>
> (1) offensive racial/ethnic terminology (e.g. "you people", "colored", etc.);
> (2) overly familiar language (e.g. addressing patients by first names, but insisting on being referred to as Dr. ---- or "Everything will be alright, little lady");
> (3) excessive use of professional jargon (e.g. cardiac arrest, sometimes misunderstood as police record);
> (4) misperceived non-verbal communicative behavior (e.g. unexpected appearance of physician or staff, consistent lateness in meeting appointments, lack of eye contact with patients).

Very few articles or texts have addressed the need for even greater interpersonal skills in the Dentist's office. Admittedly, all four points listed by Dr. Taylor are equally applicable to the dental office, but one additional factor must be noted.

The peculiarity of the dental situation lies in the fact that a large percentage of patients do not visit until they are in dire need of help. One text states that "dental services are obtained annually by less than 50 percent of the population of the United States, and much of this care is limited in scope or is urgent intervention to relieve pain or infection or both".1 The patient's entering behavior may suggest that the toothache has already begun, thus rendering the patient uncomfortable; or the patient, either from past experience or hearsay, anticipates a period of inflicted pain resulting from whirring drills and grating curettes.

It is with this mental disposition that patients often arrive at dental offices seeking rapport and relief, only to find that the overly business approach of the dentist and the assistants, demonstrated through their communication style, may offer very little to allay their fears and reduce their trepidation. The professional should realize that "success in a dental practice depends in large measure on the quality of the dentist-patient relationship. When expressing reasons for utilizing a certain dentist, patients mention the personal qualities of a dentist just as frequently as they do his technical excellence".2

Furthermore, the dental hygienist's primary responsibility "is that of dental-health education. Dental hygienists are the people primarily responsible for communication with others. Education cannot take place without effective communication."3 Based on a brief questionnaire, 23 undergraduate students responded that anxious patients have the following needs, in descending order, when they enter a dentist's office:

1. a demonstration of interst or concern by the dental team;
2. a feeling that the dentist and the assistant know what they are doing;
3. assurance that they can be treated and relieved of pain;
4. some idea why so many questions have to be asked before they are treated; and
5. some information on what the x-ray examination revealed and the treatments necessary.

Many of these needs can be partially, if not wholly, satisfied in the initial contact with the assistant and in the interview which provides the dental case history of the patient. The need for a pleasant disposition by the assistant cannot be overemphasized. The type of greeting used, the answers to the patient's questions and the assurance of relief usually reduce the tension with which the patient entered. (Furthermore, the appearance of the waiting-room, including wall-fixtures, pictures, diplomas, and available reading material will affect the patient's attitude.)

A review of the interpersonal communication literature reveals a wealth of information related to the interview. This information should prove beneficial to the dental team.

1. The interview is a form of dyadic communication involving two parties, at least one of whom has a preconceived and serious purpose, and both of whom speak and listen from time to time.4

2. 2 The heart of the interviewing process is the quality of the questioning.5

3. There are at least three parts to all interviews --the opening, the substantive part, and the closing. The initial stage, opening the the interview, is quite important, for during this time the relationship between the interviewer and the respondent is established. The objectives of the opening are to establish confidence, trust, clarity of the purpose of the interview, and the identification of mutual goals. Rapport, an inportant element throughout the interview, is largely established in the opening stage of the interview. Some pre-interview acts also relate to the establishment of rapport... and the place selected for the interview should be private, comfortable and conducive to a smooth and satisfactory interview operation. In addition to pre-interview planning, certain behavior during the opening of the interview can help to establish good rapport, confidence, and relaxation for the interview. The purpose of the interview should be clearly explained and the procedures indicated and mutually agreed to or adjusted.6

4. Feelings have been ignored for too long in communication texts. Even more serious than the ommission of the role of feelings in communication is the idea that feelings ought to have no place in communication--the idea that one ought to hide feelings when he communicates...The expression of feelings is important to interpersonal communication because feelings expressed tend to elicit the same kind of behavior from the other person. Secondly, it is important to express feelings because such expression is a prerequisite of the establishment of a relationship.7

5....Attitudes toward his audience are almost certain to manifest themselves in the tone of his speech.8

6 Pretransaction credibility is a receiver's assessment of another person before a communication transaction begins... Transactional credibility is a receiver's assessment of another person, produced during a communication transaction. Factors, such as language usage and tone serve to

alter our percep tion of a person's pretransaction credibility.9

From the above quotations, it can be determined that communication theory literature already includes materials which, when applied in the dental setting, will lessen the fears of the client and greatly enhance the rapport-building process. Thus, scholars in the communication discipline have the responsibility of sharing their scholarship with still another profession, thereby facilitating the establishment of trust and confidence between dentist and patient, as well as the improvement of the quality of human life through interpersonal communication skills.

FOOTNOTES:

1 Robert Froelich, F. Marian Bishop and Samuel Dworkin,*Communication in the Dental Office* (St. Louis: C.V. Mosby Co., 1976) p. 4.

2 Ibid., p.3

3 Suzanne S. Boundy and Nancy J. Reynolds,*Current Concepts in Dental Hygiene* (St. Louis: C V. Mosby Co., 1977) p. 41.

4 Brent D. Peterson, Gerald M. Goldhaber and R. Wayne Pace,*Communication Probes* (Chicago: Science Research Associates, Inc., 1974) p. 97.

5 Ibid., p. 99.

6 Ibid., pp. 101-102.

7 William D. Brooks and Philip Emmert,*Interpersonal Communication* (Dubuque, Iowa: Wm. C. Brown Company Publishers, 1976) p. 38.

8 Robert L. Scott, The Speaker's Reader:*Concepts in Communication*(Glenview, 111.: Scott, Foresman and Caompany, 1969) p. 15.

9 John R. Wenbur Wenburg and William W. Wilmot,*The Personal Communication Process* (New York: John Wiley & Sons, Inc., 1973) p. 142.

A PRELIMINARY STUDY OF COMMUNICATION SKILLS AMONG PRESCHOOL CHILDREN WITH SICKLE CELL DISEASE

Joan Cassandra Payne and Ida J. Stockman
Howard University

Recognition of the interrelationship between health status and psychosocial /cognitive/linguistic functioning has undoubtedly contributed to an wholistic, interdisciplinary approach to health care services. This approach is likely to have its greatest impact on the treatment of chronic diseases which involve a number of body sites and consequent areas of functioning. SickleCell Disease (SCD) is one such health condition which has received national attention within the last decade. It is an inherited hemoglobin blood disorder which afflicts approximately 2.7 per every 1000 live births among Black Americans (Gullattee, 1975). Variants of the disease such as Hemoglobin-C afflict and additional 1 per 1000 live births (Neel, 1973). A major sympton of sickle cell disease is the occurrence of painful vaso-occlusive cises resulting from the sickl sickling of red blood cells which impede or halt blood supply to vital body organs and tissues (Diggs, 1965; Honig, 1976) including those which subserve speech, language, and hearing function. As a result of oxygen deprivation, an organ may be temporarily or permanently damage.

While there is no debate that treatment of sickle cell disease requires a comprehensive, interdisciplinary approach (Gaston, 1973; Powars, et al., 1973; Lutcher, et al., 1974), little emphasis appears to have been placed on the assessment of communication skills in the development of comprehensive treatment programs. For example, of six treatment centers surveyed (Cummings, 1976), none included a Speech Pathologist or Audiologist on the professional staff nor provided for direct or coordinated speech, language, and hearing services.

Yet, it is reasonable to assume that persons with SCD would benefit from speech/language and hearing services as members of a high risk group. Ehrlich, et al., (1973) observed that of 81 five year old children with high risk neonatal histories, at least half required special help in mastering speech, language, and perceptual/motor skills.While these health histories did not include sickle cell disease, the implication is clear, particularly since the high risk health conditions included factors such as low body weight and respiratory distress, which are known to be associated with sickle cell sequelae (e.g., see Scott, et al., 1955; Whitten, 1961; Brombry 1974). Furthermore, normal speech /language development and functioning are known to be adversely

affected by some of the sensory/motor structural, neurological, and psychosocial complications that are secondary to the disease. Since the early 1930's, there have been descriptions of patients who demonstrated aphasic disorders resulting from transient or permanent central nervous system damage secondary to crises (Cook, 1930; Arena, 1935; Kampeier, 1936). Many such medical descriptions have followed (Almklov and Hansen, 1949; Scott and Ferguson, 1960; Portnoy and Herion, 1972; Pearson, 1973; Russell and Schwartz, 1975). However, there is little evidence that Speech Pathologists evaluated the patients or that careful analyses of the patients' communication skills were routinely made prior to the crises.

It has also been reported that SCD affects hearing acuity, both transiently and permanently, Among SCD adults, sensori-neural hearing loss has been attributed to the disease and vaso-occlusion of the stria vascularis (Urban, 1973; Sergeant, et al., 1975). It is well known that impaired hearing interferes with speech reception as well as normal language acquisition, if persistent and severe enough at young ages. It is also important to consider the critical need for speech-language and hearing services, where appropriate, in view of the far reaching consequences of inadequate communication skills for social adjustment and psychoeducational acheivement.

Despite the number of case history reports which have documented language disturbances among SCD victims and recent studies om impaired hearing, no systematic research on the communication performance of SCD victims appears to have been done. While a growing number of studies have focused on psychosocial problems (Whitten and Fischoff, 1974; Kosakoff, et al., 1974; Allen, et al., 1974; Kumar, et al., 1976), research has mostly emphasized medical aspects of the disease and its complicating secondary effects on physical health.

Systematic study of communication performance among persons with sickle cell disease would be useful in demonstrating the need for speech/language and hearing services as well as planning the type(s) of service program that is likely to be effective in meeting patient needs. For example, planning should be guided by information bearing on the frequency, types, severity, and etiology of communication problems as well as their uniqueness, if any, to the sickle cell population.

Such investigations can also contribute to the data base needed to counteract social and economic barriers imposed by public ignorance of the disease and its effect on the functioning of persons who are afflicted. This issue gains additional significance from the fact that sickle cell disease occurs predominantly, although not exclusively, among persons of African heritage. Sickle cell disease viewed as a "Black disease" may provide a vehicle for legitimizing discrimination against Blacks. Discrimination against persons with sickle cell disease and sickle cell trait has been cited in employment and obtaining insurance benefits (Cohn, 1972; Bowman, 1973). In some states, mandatory screening policies for Blacks who are enrolling in school or obtaining

application for marriage license have been viewed by some as a violation of civil rights.

This has been particularly unfortunate for the approximately 2,000,000 sickle cell trait carriers who are unaffected by the condition under normal circumstances. There is no medical basis for expecting a higher incidence of problems among trait carriers than a comparable population without the trait. Nor is there reason to expect occurring problems to be primary manifestations of sickle cell trait. Even among persons with sickle cell disease, the heterogeneity which undoubtedly exists just in respect to disease history is likely to yeild wide differences in the type, severity, and effect of problems on an individual's functioning. While these are reasonable assumptions, education of the public must be supported by careful and systematic documentation of the skills of persons with the disease and those with sickle cell trait, the conditions under which problems occur, and their relationship, if any, to the sickling phenomenon.

The *purpose of this study* was to provide preliminary comparative data on the speech/language and hearing performances of children with sickle cell disease and those without sickle cell disease and trait.

Method

Subjects

The experimental group (SCD) included thirteen Black preschool children with sickle cell disease from the Howard University Sickle Cell Center. The seven girls and six boys ranged in age from 2-2 to 5-10 yrs (mean age 4-9 yrs; SD = 15.6 months). Twelve had sickle cell anemia (Hb S/S) and one had Hemoglobin-C disease Hb S/C), a sickle cell disease variant. None of the children presented a history of speech, language or hearing disorder, neurological complications, head trauma, or emotional disturbance as documented by medical records and parental report. However, clinical data, summarized in Table 1, revealed variability among Ss in the number and type of reported crises, general health status, and histories of jaundice, pallor, hand-foot syndrome, and other symptoms secondary to the disease.

The control group (Non-SCD) included 21 Black preschool children from a local day care center who were free from sickle disease and trait as confirmed by Sickledex or Electrophoretic screening. The nine girls and twelve boys ranged in age from 2-6 to 5-6 yrs (mean age 3-6 yrs; SD = 14.7 months). None presented a history of chronic disease nor disorder of speech, hearing, or language as documented by health records on file at the day care center.

The SCD and Non-SCD groups were similarly distributed with respect to socioeconomic status as determined by census tract records and parental disclosure of total family income.

Testing Procedures

All children in the SCD and Non-SCD groups were administered a test battery that included (1) a three frequency pure tone audiometic

Table 1. Summary of Clinical Data on Subjects with Sickle Cell Disease.

Age	Sex	Disease Variant	No. Crises	No. Hospitalizations	Health Status	History of Other Health Conditions	Preschool Enrollment
2.2	F	HB S/S	1	0	Fair	Pallor, cardiomegaly, enlarged liver, enlarged tonsils, infected pharynx and throat	No
2.5	M	HB S/S	0	0	Good	Pallor, enlarged liver and spleen	No
2.5	F	HB S/S	1	0	Fair	Hand-foot syndrome, infected right ear	No
3.0	F	HB S/C	1	1	Good	Enlarged liver	Yes
3.1	F	HB S/S	2	2	Fair	Jaundice, pallor, enlarged liver, pneumonia, frontal bossing, gnathopathy, enlarged tonsils, misalignment of teeth, thumb sucking	Yes
4.3	M	HB S/S	1	1	Fair	Jaundice, hand-foot syndrome, enlarged heart, enlarged tonsils, icterus swelling of elbow, thumb sucking, infected pharynx, tonsils	Yes
4.9	M	HB S/S	2	2	Fair	Pallor, hand-foot syndrome, enlarged liver and tonsils	Yes
4.11	F	HB S/S	1	0	Good	Jaundice, pallor, hand-foot syndrome, enlarged tonsils, pneumonia, palpable cervical lymph nodes	Yes
5.0	M	HB S/S	1	Unknown	Unknown	Pallor, enlarged liver, pneumonia, suspected speech problem	Yes
5.2	F	HB S/S	2	2	Good	Jaundice, enlarged liver, pneumonia, icterus pain	Yes
5.5	M	HB S/S	6	2	Fair	Jaundice, pallor, hand-foot syndrome, enlarged liver, pneumonia, eneuresis icterus	Yes
5.9	F	HB S/s	5	5	Good	Jaundice, pallor, hand-foot syndrome, pain anorexia, osteomyelitis	Yes
5.10	M	HB S/S	1	2	Good	Jaundice, pallor, enlarged heart and liver, pain icterus, eneuresis	Yes

screening, (2) the *Denver Articulation Screening Examination* (DASE) (Drumwright, et al., 1973), and (3) four subtests of the *Illinois Test of Psycholinguistic* Abilities (ITPA): Auditory Reception, Verbal Expression, Auditory Sequential Memory and Visual Sequential Memory (Kirk and Kirk, 1968).

Hearing acuity was screened in an IAC Audiometric Booth (Model 402-A). Using play audiometry, each ear was screened individually at 20 dB for 250, 1000, and 2000 Hz. A child did not pass the test if he failed to respond to two or more frequencies in either ear.

The ITPA and DASE were administered and scored according to authors' instructions. Since evaluation of DASE performance is based on a child's imitative responses, testing procedures were standardized for all Ss by presenting tape recorded test items (Sony-Model TC-353D) spoken by a single female speaker.

Testing was conducted by a team of trained graduate students who rotated during data collection such that each test was administered by a different examiner to a given child. Ss were tested in roughly random order with care taken to maximize similar procedures and conditions across all subjects and examiners during each test evaluation. All children were administered the hearing test first, followed by the ITPA Subtests (in fixed order), and the DASE.

RESULTS

Hearing Assessment

All children in the SCD and Non-SCD groups passed the audiometric screening test. Of the 34 children, the two who failed even a single frequency (250 Hz) in one ear were in the SCD group, and complained of earache during testing. Overall, the two groups did not differ in their responses to hearing screening.

Speech and Language Assessment

Statistical comparison of group performances on the DASE and ITPA excluded data from two year old Ss to better equate the groups in respect to age, and eliminate the effect of "no response" on score distributions. This yielded ten Ss (mean age 4-6 yr; SD = 11.4 months) andfifteen Ss (mean age 4-3 yrs; SD = 9.3 months) for the SCD and Non-SCD groups, respectively. The remaining raw score distributions were normalized by adjusting scores around an age correction factor. The resulting "t" statistic computed for the DASE (see Table 2) revealed no statistically significant differences between SCD and Non-SCD groups. However, the mean score and standard deviation were smaller for the SCD than Non-SCD Ss.

Table 3 revealed that none of the four ITPA subtests yielded statistically significant group differences. The mean score for the SCD group was lower than that of the control group on just one test (Auditory Sequential Memory), although score variances were larger for SCD than Non-SCD Ss on three of four subtests.

Table 2. Summary of Test Results on the DASL.

	N Ss	$\bar{X}$ Score	SD
Experimental Group - SCD	10	24	.38
Control Group - Non-SCD	15	27	3.76
Sample Statistic (t') 1.47 (Adjusted for unequal numbers of subjects)			
Critical Value (P<.05) 4.38			

Table 3. Summary of Test Results on the ITPA.

Subtest	Experienced - SCD			Control - Non-SCD			Sample Statistic	Critical Value
	N	$\bar{X}$	SD	N	$\bar{X}$	SD		
Aud. Recep.	10	13.0	1.62	15	10.3	1.74	1.01	2.30
Aud. Seq. Mem.	10	15.0	5.92	15	20.2	3.93	1.66	6.36
Verbal Exp.	10	13.0	2.66	15	10.3	.58	1.51	4.90
Vis. Seq.	10	11.0	6.19	15	10.0	.69	.38	6.75
							P < .05	

Inasmuch as group means obscure individual Ss' performances, an additional analysis attempted to identify SCD children who performed systematically poorer than other SCD and Non-SCD children in the same age peer group. Essentially, the two groups' raw scores were merged into a single distribution and percentile ranks computed for each score. The score rank of each SCD child was compared with those of his age peers (i.e., children whose ages differed by no more than ±6 months) in the SCD and Non-SCD groups. An SCD child whose score ranked below that of all his age peers in one or both groups was assigned a "suspect rank" - meaning that the score was systematically low enough to question whether a child exhibited developmental delay. Using this cirterion, 53 percent or seven SCD children were assigned suspect score ranks on one or more of the speech/language tests as summarized in Table 3. Of the seven children, five or 38 percent of the children's scores ranked below those of SCD and Non-SCD age peers.

Since SCD Ss presented varied clinical profiles, we were curious about whether any health history factors could differentiate those who received suspect ranks from those who did not. Table 4 further reveals that of those who were assigned suspect ranks, 71 percent had experienced two or more crises, and 87 percent had been hospitalized at least twice. Among SCD children who were not assigned suspect ranks, none had experienced more than one crises and/or hospitalization, if any.

DISCUSSION

In this study, Black, preschool children with sickle cell disease and no history of neurological complications did not as a group perform significantly different from Black, preschool children without sickle cell disease on selected screening measures of speech, language, and hearing. This finding is consistent with research on intellectual performance (Chodorkoff and Whitten, 1963) in which SCD children with neurological complications were excluded. Such data should counteract the expectation that all persons with sickle cell disease will perform differently than persons without the disease in a given area of functioning. The widely differing score patterns observed in this study suggest a great deal of performance variability within the SCD population. The tendency for low scoring children in an age peer group to have had a larger number of vaso-occlusive crises and hispitalizations than other children suggests that variability may be partly related to health history. Thus, the failure to reveal statistically significant group differences on speech, language, and hearing tests does not mean that speech and hearing services are contraindicated.

Follow-up audiometric testing services would be in order for the two children who complained of earache during screening and failed to respond to 250 Hz in one ear even at the lenient 20 dB screening level. In this study, the 20 dB level was used because the ambient noise level in the testing environment was higher than optimum. Had a more

Table 8. Number and Distribution of 'Suspect,' Score Ranks, Number of Vaso-Occlusive Crises and Hospitalizations for Ss with Sickle Cell Disease.

Age	Sex	DASE	Aud. Recep.	Aud. Seq. Mem.	Vis. Seq. Mem.	Verbal Exp.	No. Suspect Ranks Assigned	No. Vaso-Occlusive Crises	No. Hospitalizations
3-1*	F			X	X	X	3	2	2
4-9	M	X			X	X	3	2	2
5-0	M			X			1	1	Unknown
5-2	F		X				1	2	2
5-5	M					X	1	6	2
5-9*	F				X		1	5	5
5-10	M		X	X			2	1	2
2-2	F						0	1	0
2-5	F						0	0	1
2-5	M						0	0	0
3-0	F						0	1	1
4-3	M						0	1	1
4-11	F						0	0	1

*Children whose score ranks were not consistently lower than age peers in both groups.

rigorous screening procedure been used (i.e., one which included other low frequency tones such as 500 Hz and was set at conventional levels of 10 or 15 dB), these children would probably have failed hearing screening. Reduced hearing acuity for low frequency sounds such as 250 Hz may be indicative of middle ear infections. Routine hearing screening of all SCD children should be done since middle ear infections with accompanying conductive hearing loss are often associated with upper respiratory infections. Seven or 53 percent of the SCD children in this study had a history of upper respiratory infections and one child had a history of ear infections (Refer to Table 1). Bromberg (1974) reported that pulmonary infections are a leading cause of health problems among young children with sickle cell disease. It is well known that hearing loss interferes with normal speech reception, and if persistent at young ages, may adversely affect normal speech reception, and if speech and laguage development.

The obseration that the scores of at least half the SCD children ranked below those of age peers on one or more screening tests strongly indicate that some children could profit from follow-up speech/language services in the form of diagnostic testing, and possibly therapy. Since sickle cell disease is a chronic disease with early conset in life, it is reasonable to assume that complications secondary to the disease could interfere with normal speech/language acquisition depending on their nature and severity.Therefore, routine evaluations of communication skills should be encouraged in order to detect developmental delay at young ages, and provide for early therapeutic intervention where appropriate.

Poor performance on ITPA subtests could have implications for school performance as well. The ITPA Auditory Reception subtest was among those which correlated singnificantly with scores on the Metropolitan Readiness Test (Cicirelli, et al., 1971) Carroll (1972) observed that First Graders who scored low on visual memory tasks also performed poorly on reading readiness and achievement tests. To the extent that language performance and associated skills such as memory are reliable predictors of school achievement, the value of early language assessment is further accentuated.

Among children and adults, evaluatin of communication skills and associated functions should be part of any thorough assessment of functioning following sickle cell crises. Tests of auditory and visual sequential memory tasks could even be of value in detecting neurological impairment (Stark, 1966; Carroll, 1972; Tallal & Piercy, 1973, 1974; DeRenzi & Nichelli, 1975). As such, they could complement neurological evaluationby medical staff.

In summary, several recommendations seem appropriate for enhancing services available to SCD children and their enhancing services available to SCD children. First, annual evaluations of speech, hearing, and language skills should be done within the context of comprehensive services to these children and their families. Next, counseling for parents of SCD children should include information

about normal growth and development, the acquisition of communication skills, and the ways in which they can maximize their children's potential for learning. Finally, early evaluations of communication skills should be done in addition to evaluations of reading readiness, intellectual performance, and school acheivement.

Given the small number of children studied and the gross nature of screening assessment tools, this study is viewed as only a preliminary effort to document the communication skills of children with sickle disease. Continued effort should be directed toward identifying the type incidence, and severity of communication problems in the SCD population among children and adults of all ages. In particular, research should seek insight into the clinical conditions under which communication problems are likely to occur. One obvious follow-up to the present study would be that of comparing the communication skills of SCD children with and those without neurological impairment.

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ON THE USE OF QUALIFIERS IN MEDICAL HEADLINES

By Oscar H, Gandy, JR.

Howard University

Medical and health care items have become increasingly important to the average reader. Popular magazines like, *Time*, *Reader's Digest* and *Ladies' Home Journal* have significantly increased the amount of space allocated to medical stories between 1964 and 1970. Sorenson and Sorenson report that the average length of these articles increased from 12 to 65 column inches during this period, while there was a slight decrease in the number of articles published.1

The increasing prominence of such stories may be seen as both cause and effect of increased public concern about health matters. A recent issue of *Daedalus*, entitled "Doing Better and Feeling Worse,"2 noted this contradictory trend, wherin the objective health statistics pointed to an overall improvement in the nation's health status, while the predominant public view seemed to be one of apprehension and fear.

Studies of television viewers reported by Gerbner and Gross3 suggest that heavy media use may contribute to that sense of vulnerability. Their studies have established a strong positive link between heavy television viewing and the subject's tendency to overestimate the extent of violence in their communities. These subjects were also more likely to express concern about becoming victims themselves.

Though not directly tested by Gerbner and Gross, these heavy users of media might also become excessively concerned about their health as a result of their exposure to an increasing number of articles about real or inflated medical threats. Where promotion is important in generating an audience for health-related television programs, headlines have to do the job for newspapers. Bishop4 reported that articles with encouraging headlines. He found also that people who were anxious about their health were likely to report reading more medical articles, regardless of their headlines. However, because those subjects who read the articles with encouraging headlines retained more information than those who read the same articles with threatening headlines, we have reason for concern with the manner in which headlines are chosen.

As an exploratory effort, we sought to examine several economic variables which we felt were likely to have a measurable influence on the selection of headlines, and by extension, readership of health-related information. The most important variables were identified as

those which described the newspaper in terms of advertising lineage and morning or evening publication. In addition, several envioronmental variables were identified: geographic region, retail sales, and a measure of medical expenditures by the population.

The Study

In 1977, a widely distributed professional journal reported on a survey of 10,000 of its readers. An Associated Press (AP) story based on a release issued by the journal received widespread circulation in the U.S. All articles which could be traced to the original AP release were selected from among the hundreds gathered over a two week period by a commercial clipping service.5

From an examination of these articles, Stempl's earlier conclusions6 about the impact of wire services on uniformity in smaller papers would appear to hold today. The 353 articles were virtually identical. There were however, two important exceptions. The evening papers used two paragraphs as leads, which appeared as the closing paragraphs in the morning editions. Also, there was, as expected, considerable difference in the headlines which accompanied the story.

Headlines

The headlines varied in length and style, ranging from the terse; *Doctors Cause Deaths*!, to the more reasoned *Nurse Survey Tells of Accidental Deaths*. Dummy variables were created for five words which were likely to be included in the headlines: Nurse, Doctor, Hospital, Death, and Accident. Ninety-four point three percent of the headlines included Nurse, while only 18.1 percent included Doctor. Death was included in 25.8 percent of the headlines, but the qualifier Accident appeared in only 11.9 percent of the papers.

Newspaper and Market Dedcriptors

Newspapers were grouped geographically according to nine U.S. Census divisions. The greatest number of papers were from the South Atlantic Region (n=70), and the smallest number was from the East South Central rigion (n=11), which includes the states of Kintucky, Tennessee and Alabama.

Circulation information, such as a notation of morning or evening editions, was gathered in the April 1976 issue of*Newspaper Rates and Data*. More than 60 percent of the papers in the sample were morning papers, The average line range for the sample was $.59, with cases ranging from a low of $.07 to a high of $4.30. The distribution was negatively skewed, however, with most papers with rates well below the mean.

In addition, estimates of total retail sales, and total drug sales for the metroplitan region where the papers were sold were added to the data. A new variable, SHARE was calculated as the percentage of drugs, in total retail sales. SHARE was seen as an index of the relative health of

the population, or its experience with the medical establishment. Shares ranged from 1 to 16 percent.

Findings

Lead paragraphs tended to be the source of headlines. Since in the morning papers, the paragraph which reported that 42 percent of the nurses had seen deaths caused accidentally by doctors was either missing or came late in the article, only three of the morning papers included the word death in the headlines.

In the evening papers, where the death statistics were in the lead paragraphs, 40 percent of the papers included death in their headlines. This suggests that 60 percent of the editors chose to bypass the traditional sources in order to select a less threatening headline.

However, in those papers where the editor did choose to highlight the death statistics, more than half (51.7%) neglected to include the qualifier, accidental (See Figure 1). There was a distinct regional difference in the tendency of these evening papers to use death in the headline without the qualifier. Those most likely to drop accidental were in New England, East North Central, South Atlantic and Pacific Census Regions.

Figure 1

Use of The Qualifier, By Region

	Evening Editions (n=85)									
Regions	1	2	3	4	5	6	7	8	9	Total
Used	1	10	7	1	5	0	10	4	2	41
Not Used	4	8	10	0	8	0	9	1	4	44
Percent Not Used	66.6	44.4	58.8	00.0	61.5	00.0	47.4	20.0	66.7	51.7

First order partial correlations, controlling for edition were computed in order to determine the value of the market variables in explaining the use of qualifiers (See Figure 2). As expected, line rate was positively correlated with both drug and other retail sales. Line rate was not associated with any other variable beyond the qualifier accident. Here

we found a negative correlation (-0.10, sig. — .032), which suggests that the higher the advertising rate, the less likely the paper was to include the qualifier. Since there was no relation between line rate and the selection of the death statistic, and since the partial correlations examined the evening papers as a separate population, we have little reason to question the tendency this correlation revels.

Figure 2

First Order Partial Correlations (Controlling for Edition)

	Drugs	Retail	Nurse	Doctor	Hospital	Death	Accident	Share
Rate	.81 **	.83 **	.05	.06	.07	.00	-.10 *	-.02
Drugs		.98 **	.04	.01	.07	.00	-.04	.04
Retail			.04	.03	.07	.01	-.05	.00
Nurse				-.08	.06	.01	.04	.09
Doctor					-.25 **	.56 **	.03	-.03
Hospital						-.36 **	-.21 **	-.01
Death							.60 **	.03
Accident								.14 **

* p less than .05
** p less than .01

Similarly, we find a strong positive correlation between the use of the qualifier and drugs as a share of total retail sales (.14). We note that there is no significant relationship between drug sales and accident, *except* when it is expressed as SHARE. This may be interpreted to mean that in those markets where the population spends a greater portion of their income on medicines, their newspapers are more likely to soften the headlines on medical stories.

Discussion

Because of the increased public interest in medical problems, and what we have suggested may be a casual link between media coverage and increased public anxiety about health, it is important that we take a closer look at these forces in the media system which govern the selection and presentation of medical stories. We have begun by examining the links between editorial decisions and the economic characteristics of the market.

We found, as has been suggested earlier, that there is a growing tendency for small papers to publish wire stories without modification, and often without attribution, even when that wire story is a signed article by an AP science editor.

More importantly, we did find that while editors changed very little of the textual material, many broke with tradition to take their headlines from paragraphs well within the body of the story. Fortunately, this happened in a direction away from the threatening and sensational, toward one of the more generalized criticisms in the article.

Explanations for the behavior of editors in including, or dropping the qualifier from the headline about accidental deaths are difficult to formulate. It is clear that papers with higher advertising rates are less likely to include the qualifier, but there is no logical reason for the observed behavior. Indeed, one would normally expect the opposite to be true; that the smaller, less successful papers would be more likely to use the sensational/scare form of the headline, perhaps in an effort to increase readership.

This finding is in conflict further with Bishop's suggestion that threatening headlines, at least in medical stories, are associated with less readership than those stories with encouraging headlines.

Though the inclusion of "accidental" is not very much of a comfort when the story reports that 42 percent of the nurses in a national survey believe they have witnessed deaths caused by doctors,this study suggests that characteristics of the readership*can* influence its use. We have seen that editors are more likely to include the qualifier in those markets where drug purchases represent a higher share of the consumer retail dollar.

Of course, it would take a substantial leap of faith to go from a single correlation, in a single study, to conclude that editors are concerned that they not contribute to a weakening of confidence in the medical system.

Because of the popularity of medical stories, and the visibility of wire service science writers, it should be possible to identify other such stories which have had a similar publication history. In addition to the line rate and sales information, further studies might include page placement, headline size, or other indications of the importance given to the story. Front page placement by papers with higher line rates would provide further support for an interpretation of sensationalism for the sake of sales.

Other market information which would describe the medical experiences of the population, such as the number of hospital beds per capita, would be useful additions to the drug share measure.

Notes:

1- Sorenson, J. and D. Sorenson. (1973) "A Comparison of Science Content in Magazines in 1964-65 a 1969-70" JOURNALISM QUARTERLY, Vol. 50: 97-101.

2- "Doing Better and Feeling Worse: Health in the United States" DAEDALUS (Winter, 1977).

3-Gerbner, George , Larry Gross and others (1977) "TV Violence Profile No.8: The Highlights" JOURNAL OF COMMUNICATION. Spring, pp. 171-180.

4-Bishop, Robert L. (1974) "Anxiety and Readership of Health Information" JOURNALISM QUARTERLY, Spring, pp. 40-46.

5- Articles making reference to the journal, *Nursing 77* were clipd by Luce Press Clippings, and copies were supplied to the author by *Nursin 77*.

6- Stempel, Guido H., 111 (1959) "Uniformaty of Wire Content of Six Michigan Dailies" JOURNALISM QUARTERLY Vol. 36: 45-48. See also, B. H. Liebes "Decision-Making by Telegraph Editors: AP or UPI?" JOURNALISM QUARTERLY (Autumn, 1966)Vol., 43: 434-442.

Authors Note:

Oscar H. Gandy, Jr. is an Assistant Professor at Howard University's School of Communications. *He wishes to acknowledge the assistantof Cyril Zaneski, and to offer special thanks to Jeanmarie Coogan of Nursing 77.*

"ON POPULATION COMMUNICATION POLICY: THE CASE OF INDIA"

Dr. William J. Starosta

Howard University

"We must now act decisively and bring down the birth rate speedily to prevent the doubling of our population in a mere 28 years. We should not hesitate to take some steps which might be described as drastic."
Indira Gandhi.

History will record the year 1976 as a turning point in communication strategies for Indian family planning. In dozens of family planning agencies in India a new awareness was growing that without intensive motivational and face-to-face, communication, little progress could be expected in family planning efforts. This report chronicles some of the lines of thinking that were current prior to the electoral defeat of the Gandhi government. Then it delineates some consistent communication strategies which might be expected to proceed with greater impact in the wake of the pre-1976 communication efforts.

1. *What was being done?*

Treatments such as Everett M. Roger's *Communication Strategies in Family Planning* indicate the general pattern of evolution for population communication policy in India. In the early stages of the family planning (FP) effort clinics were set up to offer a full range of services. One of the service for a variety of reasons: (1) as a type of preventive medicine, curative medicine took precedence (such as vaccinations, setting of bones, or the prescribing of drugs), (2) FP measures such as sterilization placed the onus of any side effects or personal tragedies (the death of one or more son in the artificiallylimited family) squarely onto the physician, not on to the government agency; (3) a tubectomy, as an example, required follow-up visits (and "treatment like a VIP") for any complaint, ser serious or imagined, which depleted the small stock of drugs and stole precious time from rural doctors; (4) physicians were themselves very much wary of the use of techniques such as the lool loop; and (5) many physicians were not then and are not now strongly motivated toward the limitation of family size. These were representative causes, not exhaustive one, suggested to me in the course of extensive interviews during the first half of 1976.

Nor were the public very receptive to family planning. Some of the public were unawere of the FP services. Others feared, by various

accounts promiscuity, the complete removal of the male organ or at least its incapacitation, social derision, marital strife, or the like. At this stage, the greatest problem was an undramatic one: lack of awareness of services available.

When what had grown to be 5,840 primary health centres proved ineffective in reducing the rate of population growth, planners turned to an extension approach in communication. With obvious exceptions, this was a vertical approach whereby a worker was sent to canvas some specified number of households, to screen a certain quantity of films, or to talk to village leaders to enlist their support in popularizing FP. Coupled with the deputation of entertainers who added, between acts in a puppet show, "A small family is a happy family", the public became aware of the*pariwaar niyojan nigam kendra* and their now internationally diffused red triangle symbol. During this period, awareness of at least the use of one means of FP or the location of at least one FP clinic grew impressively. But the technical or "how to" aspect of the contraceptive technology lagged behind the level of awereness. While 90% of a vast nations' population could respond superficially to questions probing awareness, few outside of the cities knew the details of any practice except abstenance from intercourse. "Rhythm" showed the least awreness of all. Some reasons for this technical information gap may again be itemized: (1) technical information contains more scientific jargon than awereness messages, it is harder to present; (2) the "how to" information about sexual practice is embarassing to speak about, and this results in a preference to attend to the "you should practice" aspects of the message over the "how to" aspects; (3) doctors themselves did not volunteer advice to their pregnant patients, when they were in a reasonable position to do so with credibility; (4) it is generally true that technical information is best conveyed to literate people: TV and radio are too intensive to serve and too public as media, and print media are available primarily to literate urbanites who already are inclined to limit families due to economic pressures; and (5) the village environment was quicker to reinforce negative messages of unhappy contraceptors than the experience of satisfied users. The diffusion model and its basic premise that "farmers talk to farmers" proved inappropriate to FP needs--contraceptors emphatically did*not* favorably comment to other contraceptors!

At this stage two new notions became prominent in the thinking of FP communicators:*motivation and strategies*. The agricultural diffusion model assumed the worthiness of the innovation, and was based more heavily on "information" than on "motivation". But contraceptive technology was imperfect--its results, in spite of dubious claims on the flannelgraphs of extesion workers' models that vasectomies were reversible failed to convincemost villagers of the appropriateness of the new technologies for their personal needs. In over twenty years of

intensive effort fewer than 20 million sterilizations were performed. Of 102 million target couples, fewer than 17 million known couples used some form of contraception, and the goal of 40 million protected couples by 1979 seemed improbable even*before* the change of government. The imperfection of the innovation led to a stress on "motivation" which permeated thinking in 1976 at all program levels. The offering of "information" was clearly secondary.

"Strategies" is a word which entered the vocabulary of FP communicators quite unconsiciously. Most FP communication agents that I asked to elaborate on this point spoke of India's many religious, linguistic, and other sociocultural groupings. Thus, the agnecies sought permission to adapt materials to local conditions, a permission often gramted by the Centre: posters used local idiom, native dress and the like; or media were coordinated in their approach, using various combinations of mass and interpersonal media. The notion of strategies seemed to be inclusive of the intensive use of face-to-face persuasion with the decentralization of bureacratic structure.

The perceived need for "motivation", which assumed that knowledge should logically lead to practice, led to a number of policy positions, three of which were the mass motivation camps, the offering of incentives, and the creation of mini-sterilization camps. "Targets" is a central notion to each of the above, and deserves a moment's attention. Each motivator, doctor, clinic, village level worker or FP functionary was set a numerical quantity of expected adopters per unit of time for the currently favored practice, usually sterilization. The pressures to reach the target led to the failure on the part of the communicator to fully explain each practice, and to a drop in the quality of the adopter: some clients were misled or coerced, others were almost past reproductive age. Even then, targets were seldom reached, and the pressures applied to meet targets led to the falsification of records and to public disapproval. Whereas communication is essentially more a qualitative concern than a quantitative one, the stress left "communication" in favor of "motivation".

Along these lines, the efforts at setting up festival-style mass vasectomy camps, coupled with material or monetary incentives, could not induce a much higher level of adopters without proper sreening; records could be altered to suggest success; and explanations of alternatives available to the adopter were hasty and one-sided, inducing a fear of sterilization and fostering rumors and discontent about the FP effort. Even more critically, FP became synonymous in the public mind with sterilization. Maternal health, fertility counselling, and other health services were not associated with a visit to a FP clinic, although all of these services were available. Mini-camps, while reducing some of the problems of pre-operation screening, had the same twin inherent problems of policy: incentives and a questionable notion of motivation.

These views are synthesized from interviews with media officials from India's Ministry of Health and Family Planning, Central Institute for Family Planning, National Institute for Health Administration and Education, and the National Institute for Community Development, along with published statements from like sources. Regional and private agencies were also represented.

11. *What must be done?*

Because of the realization that India's earlier FP efforts were insufficient to the task of responding to the FP imperatives noted in Mrs. Gandhi's lead remark, a rethinking was taking place at all government levels prior to the ascendance of the Desai government. The policy choices for a new program hinged on:

1. *Vertical vs. horizontal.* Health services which are offered topically are inherently wasteful of effort, and serve to turn a client against the *enth* topical worker to call on him. Health services, then, should be coordinated and combined. The result, a multiservice Integrated Health Service worker, could proceed on a needs basis to deal with the uppermost client need.

2. *Agency vs. client.* The client must be given greater voice in detailing his own needs, which implies, among other points, that the quota system must give way to a more responsive system. The private advertising agency approach which so boosted FP in Sri Lanka was being tested on a trial basis in three Indian states in an effort to implement a multiservice health package approach.

3. *Doctor apathy* .A NIHAE study disclosed that physicians who offer a patient seeking pregnancy care a three-minute talk about combined health benefits of the primary centers (including FP) produce quantifiable benefits. Policy should more carefully draw on the credibility of phydicians.

4. *Motivation.* The meaning of "motivation" must be reconsidered. The notion will not be discarded, but added health benefits for mother and child, work incentives for the governmentally employed, and educational benefits could produce a more meaningful system of motivation.

5. *Research base.* More and more, FP communication materials should reflect the input of researchers and social scientists, in the hope of achieving more appropriate FP materials.

6. *Project support communication.* Context, ecological environment, and public attitude increasingly must come to the attention of planners. No FP attempt can be expected to succeed without the assistance of a multimedia campaign to prepare a context for each message. The relative stress on non-sterilization aspects of the FP package should lead to increasing public acceptance of the program.

7. *Urgency.* Hopefully, with the change of governments, the sense of urgency in promoting FP as a goal will not totally disappear. Yet,

planners must realize that motivation takes time, and that too-intensive pressures by an agency turn the public against that agency.

8.*Climate for economic development*. The use of mass media outlets to promite a broad range of economic development should have a direct bearing on the population rate. Past Health and Family Planning Minister Dr. Karan Singh found international acceptance for his position that "development is the best contraceptive".

9. *Diffusion of responsibility*. The stess on mass communication should now give way to a strategy of communication which makes every functionary a channel of communication. The "face-to-face" goal may best so be realized.

111.*Summary*:

The nine elements outlined above will combine to produce a new multiservice, client-detrmined communication policy which will rapidly supplant all earlier strategies. Prospectively, it will show a significant impact on potential acceptors. If, as Mr. Gandhi opined, "for every man-made problem there is a man-made solution", then the year 1976 could mark a watershed in Indian Population communication policy.

Dr. Starosta conducted agency and field work interviews between January and August of 1976 as a Senior Fellow of the American Institute for Indian Studies.

THE EFFECTIVENESS OF A HOME-CARE PROGRAM IN FACILITATING THERAPY FOR COMMUNICATION DISORDERS AS A RESULT OF A CVA

Zilphia Toni Gee

Howard University

Home-care programs for the sick have existed in this country since the late 1700's. By the early I900's, institutionalization became the prevailing method of caring for chronically ill patients and the aged (Waterhouse, 1958). However, due to rising costs of institutionalized care, organized home-care programs were again initiated. These home-care programs rendered basic medical, nursing and social services to patients in their homes under centralized administration (Rogatz and Grocetti, 1958). Awareness of the benefits of care in the home for the chronically ill patient led to the development of more comprehensive services. In addition to the physician, nurse and social worker, home-care programs were expanded to include the speech pathologist and various other rehabilitation specialists.

No studies were found which dealt directly with speech language rehabilitation of the stroke patient in the home. Consequently, this area appears not to have been systematically investigated. The few studies found focused on general rehabilitation in home-care programs vs. rehabilitation of the stroke patient in an institutional setting. A three-year study by Gersten et al. (1968) compared the rehabilitation of chronically ill and physically disabled persons in the home and clinic settings. No major differences were detected between home and clinic groups in terms of degree of improvement thus, it was concluded that there was equal therapeutic effectiveness in the two settings. A comparative analysis by Wolcott, el al (1966) was made of the levels of functional restoration of stroke patients in both an institutionalized rehabilitation program and a home-care rehabilitation program. Their findings showed that the patients participating in the home-care program achieved the same degree of proficiency in performing the activities of daily living as that achieved by those in the institutional program. Wolcott further stated that several factors indicate that the home-care program might actually provide more complete rehabilitation than the institutional program.

Several changes occur in an individual's life following a stroke. The person is hospitalized, confined to bed, has speaking difficulty and is

often unable to walk. Frustration is therefore added to his physical handicaps. Unless there is some spontaneous return of speech and language, or unless the patient's paralysis begins to resolve, any therapeutic effort to rehabilitate the patient while hospitalized by be futile. In fact, Hirschberg (1976) stated that rehabilitation of the elderly physically handicapped is often hampered by impairment of communication. This investigator has observed that speech and language rehabilitation may also be hampered by the patient who has a physical handicap. The patient is frequently depressed and lacks the motivation necessary for retraining.

It is recognized that the aim of any therapeutic program following a stroke is to get the patient as close to his premorbid state as possible which, in addition to providing for his medical needs includes adjusting the patient to his environment where possible. The home environment is likely to be conducive to re-learning for the stroke patient. Poole, 1976 stated that many patients desire to remain at home while others are unable to enter a hospital. This investigator feels that success in rehabilitating the patient who has had a stroke depends not only on the patient's motivation but on the family and the familiarity of those surroundings during the period of recovery. The patient will probably be confined to bed upon his return home, however, it is now his bed, within his home, with this family. The familiarity of the room could generate interest and memory may be facilitated by recognition and recall of the names of personal objects and family members. With the family members and friends to assist the patient as he relearns speech, a speech and language rehabilitation program in the home may be successful. Thus, this study raises two questions: (1) Does a structured home care rehabilitation program result in improved speech and language and self-help skills following a stroke, and (2) Does improvement occur with respect to the patient's functional abilities

Method

Subjects

The subjects were originally 26 patients who received therapy for communication disturbances resulting from a stroke. Seven are deceased and others required placement in an extended care facility, while the remaining patients from this population could not be contacted. Consequently, only eight Ss were available for this study. They included five males and three females whose ages ranged from 59 to 82 years with a mean age of 70. All patients in this study suffered a cerebral vascular accident (CVA); commonly known as a stroke, a CVA results in neurological disabilities caused by cerebral vascular lesions such as embolisms, thromboses, aneurysms and hemorrhages (Eisenson, 1971). As a result of a CVA, all subjects experienced varying degrees of expressive and or receptive speech and language disturbances. Six were medically diagnosed as having left-sided paralysis.

The date of onset of the CVA occurred between October, 1976 and June, 1977 with the period of hospitalization ranging from 1 to 2¼ months.

Premorbidly, the patients' educational, socioeconomic and medical backgrounds varied. Three of the patients had visual and hearing disturbances; one patient had right-sided paralysis resulting from infantile paralysis (this patient's CVA affected his left side); still another patient suffered at least two CVA's three years prior to the present CVA; five of the patients wore a partial or upper and or lower bridge. Two patients with an upper bridge experienced discomfort and could no longer wear their dentures Post-CVA. According to medical reports and family members, all patients had been alert and active. The educational level attained varied. Three patients completed elementary and junior high school; two completed senior-high school and three completed up to three years of college or professional school. The patients' were described as having average to "superior" reading, writing and speaking abilities. All had worked and retired prior to the CVA. All were native Americans and monolingual.

Each patient was engaged in therapy with the investigator for three-to-seven months with an average of two-to-three one-hour home visits per week during 1776-1977. This study was conducted approximately eighteen months-to-two years post-trauma. All patients received services of the nurse, the speech pathologist, physical and occupational therapist, the doctors, medical social worker, nutritionist and home-health aide as needed.

Testing Procedures

Description of Tests: Prior to treatment, the Boston Diagnostic Aphasia Examination by Lea and Febiger (1972) was administered to establish baseline behavior. Post-treatment tests, which consisted of three informal inventory records constructed by the investigator provided essentially equivalent information as the Boston Examination. Post-treatment test form I, a survey questionaire, was designed to obtain general information about the patients' premorbid and current state; form Ia, an expressive-receptive language inventory was designed to elicit spontaneous speech employing open-ended questions about the patients' personal interests and experiences; from Ib, expressive-receptive language inventory was comprised of in-depth structured questions to determine the patients' ability to comprehend, recall, and produce words and sentences when presented various pictorial stimuli, common household objects and written material. The patients' responses were judged to be (1) appropriate all the time, (2) appropriate some of the time, (3) never appropriate in six areas of functioning on both the pre-test and post-test: (1) comprehension

ability; (2) recall ability; (3) reading ability; (4) intelligibility of speech; (5) naming ability; and (6) usage of complete sentences.

Test Administration

The Boston Diagnostic Aphasia Examination was administered approximately two months post-CVA prior to therapy, The procedure for each area as prescribed by the author was followed. The post-test was administered about one year after therapy terminated.

The interviews and test were conducted by the investigator. On Form I, one family member was interviewed to obtain basic background information on the patient prior to suffering a CVA and to determine the patient's present abilities to perform various tasks in daily-life situations. These responses were recorded on the form verbatim in addition to checking a yes-no response. The subjects were tested individually employing first, open-ended questions which referred to previous employment, TV shows, and family members to elicit as much conversational speech as possible. Secondly, each subject was asked to produce serial content (counting, reciting the days of the week, etc.), to identify (name) the pictured item and object shown and to describe the function of how a specific object is used.

The patients' were asked to, (1) name the object to which the investigator pointed in the room, (2) read four simple sentences, and (3) write his her name and address. Subjects' responses were audio-taped while the investigator simultaneously recorded the verbatim responses on the form. If assistance were given to the patient this was checked on the form under "prompt". In addition, an investigator's checklist was utilized to rate the subject's expressive-receptive responses or lack of a response on the basis of intelligibility of speech, appropriateness (or meaningfulness) of a response, complete usage of a sentence, the level or degree to which comprehension was intact including recall ability and the specific type of speech and or language disturbance (aphasia, verbal apraxia, dysarthria, agraphia and or visual agnosia).

Results and Discussion

Pre- and post-treatment results of this study are summarized in Tables 1, 2 and 3. A comparison of the pre-post test results revealed an improvement in speech and language behavior and in functional abilities for more than half the patients in most categories except in the area of "caring for self". The pre-treatment data revealed that more than half the patients were incapable of ambulating (walking) while post-treatment data showed a decrease in the number of patients who were non-ambulatory; one of the patient's was confined to bed and another was confined to a wheelchair or bed.

Although there is a discrepancy between the pre- and post-treatment data of the ability of patients' to care for themselves; of those whose

response was "no" on the post-test, three patients and their families acknowledged that they could attend to many basic needs but were not allowed to do so. Family members continued to give assistance when it was no longer required. Only two patients were observed to be incapable of caring for their daily needs at the time of the post-test.

A significant shift in receptive and expressive language behavior was evidenced from pre-test to post-test in several areas. Following therapy, more than half of the patients responded appropriately all of the time in the receptive language categories and in the area of using complete sentences on the expressive language level. Two patients who used complete sentences during the pre-and post-test had severe dysarthria; a neuromuscular impairment which disturbs the total motorics of speech and may result in chewing and swallowing difficulties. These patients showed no reduction in language usage but the intelligibility of speech, through discernible to the trained-ear, was still impaired.

Patients who never responded appropriately during the pre-test in the expressive language areas, improved during the therapy. Half these patients responded appropriately some of the time following treatment. The post-test indicated that two patients had disturbances in all areas of expressive and receptive language.

Progress attained in home-care therapy appeared to be related to the patients' overall functional abilities. Those patients who improved in their abilities to walk and attend to their needs during the course of physical and occupational therapy, became more receptive to speech therapy; as language usage returned (even minimally) the patients did not become upset as frequently as they did during the first month of the therapy. It was observed that those patients who were ambulating, with or without assistance were also speaking. Progress with the stroke patient is dependent upon such factors as the site of lesion, the extent of damage, the patient's premorbid state and the degree of physical impairment. Consideration then, has to be given to those areas which influence the course of therapy. Consequently, there is uncertainty as to the degree in which opposing factors affected those patients who showed minimal progress or those who regressed. For instance, one of the patients did not phonate (absence of voice and ahd receptive disturbances prior to treament. During post-testing, the patient pointed to objects, named pictures, was able to phonate, and understood questions, but did not formulate a simple sentence. For this patient, maximum gains appeared to have been made. Conversely, another patient was alert, motivated, and spoke in complete sentences during the pre-test; this patient was disoriented and showed a decrease in receptive and expressive language abilities after treatment.

Conclusions

One of the limitations of this study is the time in which post-testing was done; approximately 12 to 14 months after treatment terminated. Conseqently, the question whether improvement in speech and language resulted from other intervening variables during that year is a valid one. Certainly this is a weakness of post hoc methodology. However, at the time these patients discontinued therapy, the period of spontaneous recovery of language, (two months post-CVA), had passed. Therefore, most patients had probably attained maximum progress at the end of therapy. Another limitation involves the small number of subjects used which further imposed a limitation on the study of various types of speech and language disturbances that result from a CVA. Further study utilizing more subjects and control groups is needed to determine whether therapeutic intervention in a home-care program yields results that are more effective or equally effective as an institutional program.

The success of therapy in the home appeared to result from the efforts of a caring family combined with the cooperativeness of the rehabilitation te .

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TABLE 1

Percentage of Ss who Showed Different Levels of Skills in Selected Areas of Receptive Language Before and After Therapy N=8

Receptive Language	Appropriate All the Time PRE N	POST N	Appropriate Some of the Time PRE N	POST N	Never Appropriate PRE N	POST N
Comprehension Ability	(3) 37.5%	(5) 62.5%	(3) 37.5%	(2) 25%	(2) 25%	(1) 12.5%
Recall Ability	(1) 12.5%	(5) 62.5%	(4) 50%	(2) 25%	(3) 37.5%	(1) 12.5%
Reading Ability	(1) 12.5%	(5) 62.5%	(2) 25%	(1) 12.5%	(5) 62.5%	(2) 25%

TABLE 2

Percentage of Ss who Showed Different Levels of Skills in Selected Areas of Expressive Language Before and After Therapy N=8

Expressive Language	Appropriate All the Time PRE N	POST N	Appropriate Some of the Time PRE N	POST N	Never Appropriate PRE N	POST N
Intelligibility of Speech	(1) 12.5%	(3) 37.5%	(1) 12%	(4) 50%	(6) 75%	(1) 12.5%
Naming Ability	(1) 12.5%	(4) 50%	(4) 50%	(2) 25%	(3) 37.5%	(2) 25%
Complete Sentence Structure	(3) 37.5%	(6) 75%	(3) 37.5%	0	(2) 25%	(2) 25%

TABLE 3

Percentage of Ss With Limited Functional Abilities in Selected Areas (percentages based on N of eight Ss)

	Yes	No	Yes	No
Functional Abilities	PRE		POST	
	N	N	N	N
Alert	(6) 75%	(2) 25%	(7) 87.5%	(1) 12.5%
Frequently Upset	(8) 100%	0	0	(8) 100%
Confined to Bed and Wheelchair	(7) 87.5%	(1) 12.5%	(2) 25%	(6) 75%
Non-Ambulatory	(7) 87.5%	(1) 12.5%	(2) 25%	(6) 75%
Assistance for Daily Care	(8) 100%	0	(3) 37.5%	(5) 62.5%
Cares for Self	(1) 12.5%	(7) 87.5%	(3) 37.5%	(5) 62.5%